

# LEARNING JOURNEY GCSE Computer Science

## YEAR 10 – Computer Science: TERM 1

### J277/02 – COMPUTATIONAL THINKING

**PRIOR LEARNING** (from Key Stage 3):

	TERM 1	TERM 2	TERM 3
7 AR YE	<b>MY DIGITAL WORLD</b> Be SMART online and using ICT Software Mastery: Microsoft Suite	<b>AUDIENCE AND PURPOSE</b> Create products that have impact Software Mastery: PowerPoint	<b>UNDERSTANDING COMPUTERS</b> How computers work Software Mastery: Scratch
8 AR YE	<b>DIGITAL MEDIA</b> Being creative in a digital world Software Mastery: Photoshop	<b>CYBER SECURITY</b> Living in the modern world Software Mastery: PowerPoint	<b>PYTHON BASICS</b> Begin to programme Software Mastery: Python
9 AR YE	<b>CREATIVE DESIGN</b> Creative iMedia taster Software Mastery: Photoshop	<b>ADVANCED PYTHON</b> Computer Science taster Software Mastery: Python	<b>CREATE A VIDEO</b> Research developing technology Software Mastery: Premier Elements

### Aim of the Unit

In this unit students will learn how to develop an understanding of computational thinking. Students will learn how to approach problems by breaking them down using specific methods. Students will also learn how to develop an algorithm as well as techniques used to search and sort data sets.

### Topics to be covered:

- Computational thinking
- Algorithms
- Searching & Sorting Algorithms
- Flowcharts
- Pseudocode
- Interpret, Correct or Complete Algorithms

### Assessment Procedure

The topics covered in this unit, will help prepare students for some of the theory needed for Paper 1. This will be examined at the end of Year 11 and is worth 50% of the final mark for the course. During the lessons, students will undertake informal MCQ (multiple choice questions) to diagnose misconceptions. They will then undertake an end of unit assessment. The assessment will be out of 50 marks.

### Homework

Homework will be set at least once a week. Seneca assignments will be assigned to help with knowledge retrieval in the run up to assessments. Details of individual homework can be found on Synergy.

### How can you help?

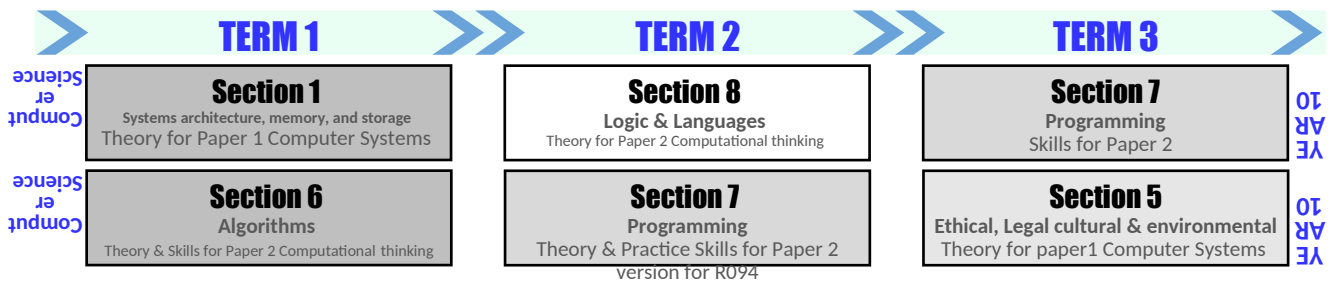
Encourage your child to attend sessions with their teacher after school to improve their understanding. They should also review their theory regularly at home, as well as complete homework's thoroughly as they are all from past exam papers. Support is also available through explainer videos contained on the class team's page.



Unit 6 - ALGORITHMS (Knowledge & Skills)				
<b>6.1 Computational thinking</b>	Date:	I	K	L
Abstraction   Decomposition   Algorithmic   Drawing tools   Adjustments to				
<b>6.2 Searching algorithms</b>	Date:	I	K	L
Trace   Linear   Binary				
<b>6.3 Sorting Algorithms</b>	Date:	I	K	L
Trace   Bubble   Insertion   Merge				
<b>6.4 Developing algorithms using flowcharts</b>	Date:	I	K	L
Input   Output   Storage   Process				
<b>6.5 Developing algorithms using pseudocode</b>	Date:	J	K	L
Sequence   Selection   Iteration   Variable				
<b>6.6 Interpret, Correct or Complete Algorithms</b>	Date:	J	K	L
Flowchart   pseudocode   Interpret   Trace Table   Debugging   Logic error   Syntax error				

Revision, Test and Closing the Gap for topics covered so far	
<b>TEST RESULT:</b>	<b>Target Grade:</b>
<b>Mark:</b>	<b>Percentage:</b>
<b>Grade:</b>	<b>On target?</b>

**FUTURE LEARNING:**



★ SINCERE ★ THOUGHTFUL ★ ASPIRATIONAL ★ RESILIENT ★ SOLIDARITY ★